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# REPORT ON BOILERS.

No. 94107

Received at London Office

Writing Report 6261 700 81 192 When handed in at Local Office 18 JUL 1929 192

Port of London (Gosport)

Survey held at Kings Lynn

Date, First Survey 24 AUGUST 1928. Last Survey 18 JANUARY 1929

on the S.S. "ANGEL"

(Number of Visits 8) Gross 113.31 Tons Net

Built at Kings Lynn. By whom built Kings Lynn Shipyard Co. Ltd. Yard No. 249 When built 1929

Machinery made at Beedes. By whom made Elliott + Garrod Ltd. Engine No. 6650 When made 1929.

Boiler made at Kings Lynn. By whom made A. Dodman & Co. Ltd. Boiler No. 1167 When made 1929.

Indicated Horse Power 34 Owners Angel Co. Ltd. Port belonging to San Sebastian.

## WATER TUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel Appleby Iron Co. Ltd. (Letter for Record S.)

Heating Surface of Boilers 635 sq ft Is forced draught fitted No. Coal or Oil fired Coal.

Description of Boilers One. Single ended. I.S.B. Working Pressure 200 lbs.

Tested by hydraulic pressure to 350 lbs. Date of test 18-1-29 No. of Certificate 281 Can each boiler be worked separately Yes

Area of Firegrate in each Boiler 21.6 sq ft No. and Description of safety valves to each boiler 2. Spring loaded.

Weight of each set of valves per boiler (per Rule 3.23 3.5 as fitted 4.87) Pressure to which they are adjusted 205 lbs. Are they fitted with easing gear Yes.

In case of donkey boilers, state whether steam from main boilers can enter the donkey boiler Yes

Smallest distance between boilers or uptakes and bunkers or woodwork 12" Is oil fuel carried in the double bottom under boilers Yes

Smallest distance between shell of boiler and tank top plating Yes Is the bottom of the boiler insulated No.

Smallest internal dia. of boilers 9'-0" Length 9'-0" Shell plates: Material Steel Tensile strength 27-33 tons.

Thickness 29/32 Are the shell plates welded or flanged No. Description of riveting: circ. seams end D.R. lap. inter. 3 1/2"

Quality of seams T.R.D.B.S. (3 rivets) Diameter of rivet holes in circ. seams 1 1/16" long. seams 1 7/16" Pitch of rivets 4 1/2"

Percentage of strength of circ. end seams (plate 68 rivets 48) Percentage of strength of circ. intermediate seam (plate rivets)

Percentage of strength of longitudinal joint (plate 76.4 rivets 97.5 combined) Working pressure of shell by Rules 202 lbs.

Thickness of butt straps (outer 3/4 inner 3/4) No. and Description of Furnaces in each Boiler 2. Furn. Corrugated. 2.C.P.

Material Steel Tensile strength 26-30 tons Smallest outside diameter 26 3/4" 246"

Length of plain part (top bottom) Thickness of plates (crown 3/8 bottom 5/8) Description of longitudinal joint Weld.

Dimensions of stiffening rings on furnace or c.c. bottom Working pressure of furnace by Rules 200 lbs.

End plates in steam space: Material Steel Tensile strength 26-30 tons Thickness 7/8" Pitch of stays 1-4" x 10 1/2"

How are stays secured Double nuts + washers Working pressure by Rules 245 lbs. 7/8"

Tube plates: Material (front back) Steel Tensile strength (26-30 26-30) Thickness (11/16 11/16)

Lean pitch of stay tubes in nests 8 3/4" Pitch across wide water spaces 15 1/4" Working pressure (front back) 200 lb 219 lb

Girders to combustion chamber tops: Material Steel Tensile strength 28-32. Depth and thickness of girder

At centre 8 5/8" x 7/8" Double Length as per Rule 23" Distance apart 9 1/2" No. and pitch of stays

In each Two. 6 5/8" Working pressure by Rules 204 lbs. Combustion chamber plates: Material Steel

Tensile strength 26-30 Thickness: Sides 5/8" Back 19/32" Top 5/8" Bottom 5/8"

Pitch of stays to ditto: Sides 6" Back 7 7/8" x 7 7/8" Top 6 5/8" x 9 1/2" Are stays fitted with nuts or riveted over Nuts.

Working pressure by Rules 202 lbs. Front plate at bottom: Material Steel Tensile strength 26-30

Thickness 7/8" Lower back plate: Material Steel Tensile strength 26-30 Thickness 5/8"

Pitch of stays at wide water space 15 1/4" x 7 7/8" Are stays fitted with nuts or riveted over Nuts.

Working Pressure 214 lbs. Main stays: Material Steel Tensile strength 28-32

Diameter (At body of stay, or Over threads) 2 1/4" + 2 1/2" No. of threads per inch 9 Area supported by each stay 168 sq in

Working pressure by Rules 206 Screw stays: Material Steel Tensile strength 26-30

Diameter (At turned off part, or Over threads) 1 1/2" No. of threads per inch 9 Area supported by each stay 62 sq in

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Working pressure by Rules **202** Are the stays drilled at the outer ends **no** (Margin stays: Diameter <sup>At turned off part,</sup> <sub>or</sub> <sup>Over threads</sup> **1 3/4"**)  
 No. of threads per inch **9** Area supported by each stay **90.5"** Working pressure by Rules **201**  
 Tubes: Material **Steel** External diameter <sup>Plain</sup> **3 1/4"** Thickness <sup>8 L.S.G.</sup> **1/4" + 5/16"** No. of threads per inch **9"**  
 Pitch of tubes **4 3/8" x 4 3/8"** Working pressure by Rules **(P) 220 lb. (S) 205 lb.** Manhole compensation: Size of opening in shell plate **15 x 19"** Section of compensating ring **7 1/2" x 7/8"** No. of rivets and diameter of rivet holes **42. 1 1/16"**  
 Outer row rivet pitch at ends **5 5/16"** Depth of flange if manhole flanged **3 1/8"** Steam Dome: Material **Steel**  
 Tensile strength **26-30** Thickness of shell **1/2"** Description of longitudinal joint **S.R. Double butt straps.**  
 Diameter of rivet holes **15/16"** Pitch of rivets **2 1/2"** Percentage of strength of joint <sup>Plate</sup> **62.75** <sub>Rivets</sub> **92**  
 Internal diameter **2'-6"** Working pressure by Rules **275 lb.** Thickness of crown **1 1/32"** No. and diameter of stays **no** Inner radius of crown **2'-6"** Working pressure by Rules **208 lb.**  
 How connected to shell **riveted** Size of doubling plate under dome **4'-3" x 3/4"** Diameter of rivet holes and pitch of rivets in outer row in dome connection to shell **15/16" x 2 7/8" Dome flange. + 1 1/16" x 5" in Dome doubling plate.**

**Type of Superheater**

Manufacturers of <sup>Tubes</sup> <sub>Steel castings</sub>  
 Number of elements Material of tubes Internal diameter and thickness of tubes  
 Material of headers Tensile strength Thickness Can the superheater be shut off and the boiler be worked separately  
 Is a safety valve fitted to every part of the superheater which can be shut off from the boiler  
 Area of each safety valve Are the safety valves fitted with easing gear Working pressure as per Rules  
 Pressure to which the safety valves are adjusted Hydraulic test pressure: tubes, castings and after assembly in place Are drain cocks or valves fitted to free the superheater from water where necessary

Have all the requirements of Sections 14 to 23 inclusive for boilers been complied with **Yes**

FRED DODMAN & Co Ltd

The foregoing is a correct description,

*A. E. Farmined*

Manufacturer.

Dates of Survey <sup>During progress of</sup> **1925. Aug 24. Oct 1. 16 Nov 12. Dec 14**  
<sub>work in shops - - -</sub>  
<sup>During erection on</sup> **1929. JAN 3. 16. 8**  
<sub>board vessel - - -</sub>

Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.)

Total No. of visits **8 (in shops)**

**GENERAL REMARKS** (State quality of workmanship, opinions as to class, &c.)

*This boiler has been built under Special Survey in accordance with the Rules and approved plan. The material + workmanship are good.*

Survey Fee ... .. £ **4 : 4 : 0**  
 Travelling Expenses (if any) £ **5 : 0 : 6**

When applied for, **19 JUL 1929**  
 When received, **24.7.1929**

*A. E. Farmined*

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Assigned

*See Report attached*



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